

SMC 100 single-stage reciprocating compressors



SMC 108 reciprocating compressor block with Unisab II

Sabroe SMC 100 reciprocating compressors are ideal for use in medium-size industrial and marine refrigeration installations. They are the most robust, reliable and economical option for a wide range of heavy-duty applications of this particular size.

The well-proven Sabroe SMC 100 range consists of fifteen different models covering capacities of between 226 and 1357 m³/h swept volume at 1500 rpm maximum speed. They can be used with almost all refrigerants, and in high-stage or booster operation.

Compatible and upgradable

The Sabroe SMC 100 design is future-compatible because ongoing changes and improvements are designed so that they can also be implemented on earlier SMC 100 models. This makes it easy to upgrade and retrofit older compressors to the latest standard.

Standard equipment

Sabroe SMC 100 compressors are supplied with the following equipment as standard

- compressor block with oil pump and oil filter
- solenoid valves for capacity control
- suction and discharge stop valves
- safety valve
- oil-charging valve
- suction filter
- oil-level sight glass
- electric immersion heater in crankcase
- evacuation valve
- pre-lubrication valve.

Significant advantages

The advantages of the Sabroe SMC 100 compressor design include

- High coefficient of performance (COP), with excellent part-load characteristics.
- Excellent accessibility and few requirements for spare parts.
- Any necessary repairs can normally be undertaken without having to remove the compressor.
- Chromium piston rings, gas-dampened discharge valves and hardened cylinder liner surfaces.
- Spring-loaded safety heads, balanced refrigerant-tight shaft seal, asbestos-free gaskets and an internal bypass valve to prevent excessive pressure.

Customer benefits

For the customer, the benefits of the Sabroe SMC 100 compressor design include

- ➔ • Lower power consumption, especially when operating at part load. This greatly reduces operating costs.
- ➔ • Easy maintenance, resulting in low service costs and minimal downtime.
- ➔ • All repairs can be carried out on site at the customer's own premises, reducing both repair costs and downtime.
- ➔ • Extended service life for all moving parts.
- ➔ • The special design ensures low noise and low vibration levels, with safe, environmentally friendly operation.



Optional equipment

A wide range of optional equipment is also available on Sabroe SMC 100 compressors. This includes

- gauges, thermometers and temperature/pressure control switches
- Sabroe Unisab II microprocessor control with temperature/pressure sensors
- extended single-cylinder capacity control or standard capacity control with full unloading
- oil level regulator for parallel systems
- explosion-proof equipment
- base frame with coupling and guard for direct-drive unit
- base frame with pulleys, belts and guard for V-belt drive unit
- motors
- oil separators with solenoid valve and TLT valve for oil return
- oil charging pump
- vibration dampers and foundation bolts
- tool sets
- sets of genuine Sabroe spare parts.

Compressor and oil cooling

Depending on specific refrigerant and operating conditions, it can be necessary to supplement basic air convection cooling with one of the following options to make sure that the compressor and the lubricating oil are cooled efficiently

- water-cooled head covers
- water-cooled side covers for oil cooling
- refrigerant-based oil cooling
- thermo-pump system (for use with R717 only).



SMC 112 reciprocating compressor package with gauges and electro-mechanical switches

Technical data

Model	Number of cylinders	Bore x stroke mm	Max. rpm *	Swept volume at max. rpm m ³ /h	Nominal capacities kW					Dimensions Direct-coupled unit mm			Weight excl. motor kg	Sound pressure level dB(A)
					R717		R22			L	W	H		
					Single/high stage		Booster	Single/high stage						
					-10/+35°C	0/+35°C	-40/-10°C	0/+35°C	-10/+35°C					
SMC 104 S	4	100 x 80	1500	226	129	209	35	229	150	1800-2300	995	1095	830	80
SMC 104 L	4	100 x 100	1500	283	167	266	46	199	132	1800-2300	995	1095	830	81
SMC 104 E	4	100 x 120	1500	339	206	324	57	n/a	n/a	1800-2300	995	1095	830	81
SMC 106 S	6	100 x 80	1500	339	194	313	52	343	225	1850-2450	995	1130	925	81
SMC 106 L	6	100 x 100	1500	424	251	398	70	299	198	1850-2450	995	1130	925	82
SMC 106 E	6	100 x 120	1500	509	309	486	86	n/a	n/a	1850-2450	995	1130	925	82
SMC 108 S	8	100 x 80	1500	452	259	417	70	457	300	1900-2500	1005	1125	990	82
SMC 108 L	8	100 x 100	1500	565	335	531	93	398	264	1900-2500	1005	1125	990	83
SMC 108 E	8	100 x 120	1500	679	412	648	115	n/a	n/a	1900-2500	1005	1125	990	83
SMC 112 S	12	100 x 80	1500	679	388	626	106	686	450	2425-3000	1095	1335	1660	83
SMC 112 L	12	100 x 100	1500	848	502	796	140	597	396	2425-3000	1095	1335	1660	83
SMC 112 E	12	100 x 120	1500	1018	618	972	172	n/a	n/a	2425-3000	1095	1335	1660	83
SMC 116 S	16	100 x 80	1500	905	517	834	141	914	600	2475-3200	1135	1335	1760	84
SMC 116 L	16	100 x 100	1500	1131	669	1062	187	796	528	2475-3200	1135	1335	1760	84
SMC 116 E	16	100 x 120	1500	1357	824	1297	230	n/a	n/a	2475-3200	1135	1335	1760	84

Nominal capacities are based on 5°C subcooling and max. rpm

*) SMC 100S : max. rpm 1800 for R22

SMC 100L : max. rpm 1200 for R22

All information is subject to change without previous notice.